

Exhibit C – Part 2

1 **1. The ignition switch defects.**

2 38. The ignition switch defects can cause the vehicle's engine and electrical systems to
3 shut off, disabling the power steering and power brakes and causing non-deployment of the
4 vehicle's airbag and the failure of the vehicle's seatbelt pretensioners in the event of a crash.

5 39. The ignition switch systems at issue are defective in at least three major respects.
6 The first is that the switches are simply weak; because of a faulty "detent plunger," the switch can
7 inadvertently move from the "run" to the "accessory" or "off" position.

8 40. The second defect is that, due to the low position of the ignition switch, the driver's
9 knee can easily bump the key (or the hanging fob below the key), and cause the switch to
10 inadvertently move from the "run" to the "accessory" or "off" position.

11 41. The third defect is that the airbags immediately become inoperable whenever the
12 ignition switch moves from the "run" to the "accessory" position. As NHTSA's Acting
13 Administrator, David Friedman, recently testified before Congress, NHTSA is not convinced that
14 the non-deployment of the airbags in the recalled vehicles is solely attributable to a mechanical
15 defect involving the ignition switch:

16 And it may be even more complicated than that, actually. And that's
17 one of the questions that we actually have in our timeliness query to
18 General Motors. It is possible that it's not simply that the – the
19 power was off, but a much more complicated situation where the
20 very specific action of moving from on to the accessory mode is what
21 didn't turn off the power, but may have disabled the algorithm.

22 That, to me, frankly, doesn't make sense. From my perspective, if a
23 vehicle – certainly if a vehicle is moving, the airbag's algorithm
24 should require those airbags to deploy. Even if the – even if the
25 vehicle is stopped and you turn from 'on' to 'accessory,' I believe
26 that the airbags should be able to deploy.

27 So this is exactly why we're asking General Motors this question, to
28 understand is it truly a power issue or is there something embedded
in their [software] algorithm that is causing this, something that
should have been there in their algorithm.

⁵ Congressional Transcript, Testimony of David Friedman, Acting Administrator of NHTSA (Apr. 2, 2014), at 19.

1 42. Vehicles with defective ignition switches are, therefore, unreasonably prone to be
2 involved in accidents, and those accidents are unreasonably likely to result in serious bodily harm
3 or death to the drivers and passengers of the vehicles.

4 43. Alarminglly, GM knew of the deadly ignition switch defects and at least some of
5 their dangerous consequences from the date of its inception on July 10, 2009, but concealed its
6 knowledge from consumers and regulators.

7 44. In part, GM's knowledge of the ignition switch defects arises from the fact that key
8 personnel with knowledge of the defects remained in their same positions once GM took over from
9 Old GM.

10 45. For example, the Old GM Design Research Engineer who was responsible for the
11 rollout of the defective ignition switch in 2003 was Ray DeGiorgio. Mr. DeGiorgio continued to
12 serve as an engineer at GM until April 2014 when he was suspended as a result of his involvement in
13 the defective ignition switch problem. Later in 2014, in the wake of the GM Report,⁶ Mr. DeGiorgio
14 was fired.

15 46. In 2001, two years *before* vehicles with the defective ignition switches were ever
16 available to consumers, Old GM privately acknowledged in an internal pre-production report for
17 the model/year ("MY") 2003 Saturn Ion that there were problems with the ignition switch.⁷ Old
18 GM's own engineers had personally experienced problems with the ignition switch. In a section of
19 the internal report titled "Root Cause Summary," Old GM engineers identified "two causes of
20 failure," namely: "[l]ow contact force and low detent plunger force."⁸ The report also stated that
21 the GM person responsible for the issue was Ray DeGiorgio.⁹

22 47. Mr. DeGiorgio actively concealed the defect, both while working for Old GM *and*
23 while working for GM.

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26 ⁶ References to the "GM Report" are to the "*Report to Board of Directors of General Motors
Company Regarding Ignition Switch Recalls*," Anton R. Valukas, Jenner & Block (May 29, 2014).

27 ⁷ GM Report/Complaint re "Electrical Concern" opened July 31, 2001, GMHEC000001980-90.

28 ⁸ *Id.* at GMHEC000001986.

⁹ *Id.* at GMHEC000001981, 1986.

1 48. Similarly, Gary Altman was Old GM's program-engineering manager for the
2 Cobalt, which is one of the models with the defective ignition switches and hit the market in MY
3 2005. He remained as an engineer at GM until he was suspended on April 10, 2014, by GM for his
4 role in the ignition switch problem and then fired in the wake of the GM Report.

5 49. On October 29, 2004, Mr. Altman test-drove a Cobalt. While he was driving, his
6 knee bumped the key and the vehicle shut down.

7 50. In response to the Altman incident, Old GM opened an engineering inquiry, known
8 as a "Problem Resolution Tracking System inquiry" ("PRTS"), to investigate the issue. According
9 to the chronology provided to NHTSA by GM in March 2014, engineers pinpointed the problem
10 and were "able to replicate this phenomenon during test drives."

11 51. The PRTS concluded in 2005 that:

12 There are two main reasons that we believe can cause a lower effort
13 in turning the key:

- 14 1. A low torque detent in the ignition switch and
- 15 2. A low position of the lock module in the column.¹⁰

16 52. The 2005 PRTS further demonstrates the knowledge of Ray DeGiorgio (who, like
17 Mr. Altman, worked for Old GM and continued until very recently working for GM), as the
18 PRTS's author states that "[a]fter talking to Ray DeGiorgio, I found out that it is close to
19 impossible to modify the present ignition switch. The switch itself is very fragile and doing any
20 further changes will lead to mechanical and/or electrical problems."¹¹

21 53. Gary Altman, program engineering manager for the 2005 Cobalt, recently admitted
22 that Old GM engineering managers (including himself and Mr. DeGiorgio) knew about ignition
23 switch problems in the vehicle that could disable power steering, power brakes, and airbags, but
24 launched the vehicle anyway because they believed that the vehicles could be safely coasted off the
25 road after a stall. Mr. Altman insisted that "the [Cobalt] was maneuverable and controllable" with
26 the power steering and power brakes inoperable.

27 ¹⁰ Feb. 1, 2005 PRTS at GMHEC000001733.

28 ¹¹ *Id.*

1 54. Incredibly, GM now claims that it and Old GM did not view vehicle stalling and the
2 loss of power steering as a “safety issue,” but only as a “customer convenience” issue.¹² GM bases
3 this claim on the equally incredible assertion that, at least for some period of time, it was not aware
4 that when the ignition switch moves to the “accessory” position, the airbags become inoperable –
5 even though Old GM itself designed the airbags to not deploy under that circumstance.¹³

6 55. Even crediting GM’s claim that some at the Company were unaware of the rather
7 obvious connection between the defective ignition switches and airbag non-deployment, a stall and
8 loss of power steering and power brakes is a serious safety issue under any objective view. GM
9 *itself* recognized in 2010 that a loss of power steering *standing alone* was grounds for a safety
10 recall, as it did a recall on such grounds.

11 56. In fact, as multiple GM employees confirm, GM *intentionally* avoids using the
12 word “stall” “because such language might draw the attention of NHTSA” and “may raise a
13 concern about safety, which suggests GM should recall the vehicle...”¹⁴

14 57. Rather than publicly admitting the dangerous safety defects in the vehicles with the
15 defective ignition switches, GM attempted to attribute these and other incidents to “driver error.”
16 GM continued to receive reports of deaths in Cobalts involving steering and/or airbag failures from
17 its inception up through at least 2012.

18 58. In April 2006, the GM design engineer who was responsible for the ignition switch
19 in the recalled vehicles, Design Research Engineer Ray DeGiorgio, authorized part supplier Delphi
20 to implement changes to fix the ignition switch defect.¹⁵ The design change “was implemented to
21 increase torque performance in the switch.”¹⁶ However, testing showed that, even with the
22 proposed change, the performance of the ignition switch was *still* below original specifications.¹⁷

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24 ¹² GM Report at 2.

25 ¹³ *Id.*

26 ¹⁴ GM Report at 92-93.

27 ¹⁵ General Motors Commodity Validation Sign-Off (Apr. 26, 2006), GMHEC000003201. *See*
also GM Mar. 11, 2014 Ltr. to NHTSA, attached chronology at 2.

28 ¹⁶ *Id.*

¹⁷ Delphi Briefing, Mar. 27, 2014.

1 59. Modified ignition switches – with greater torque – started to be installed in 2007
2 model/year vehicles.¹⁸ In what a high-level engineer at Old GM now calls a “cardinal sin” and “an
3 extraordinary violation of internal processes,” Old GM changed the part design *but kept the old*
4 *part number*.¹⁹ That makes it impossible to determine from the part number alone which GM
5 vehicles produced after 2007 contain the defective ignition switches.

6 60. At a May 15, 2009 meeting, Old GM engineers (soon to be GM engineers) learned
7 that data in the black boxes of Chevrolet Cobalts showed that the dangerous ignition switch defects
8 existed in hundreds of thousands of Defective Vehicles. But still GM did not reveal the defect to
9 NHTSA, Plaintiff, or consumers.

10 61. After the May 15, 2009 meeting, GM continued to get complaints of unintended
11 shut down and continued to investigate frontal crashes in which the airbags did not deploy.

12 62. After the May 15, 2009 meeting, GM told the families of accident victims related to
13 the ignition switch defects that it did not have sufficient evidence to conclude that there was any
14 defect. In one case involving the ignition switch defects, GM threatened to sue the family of an
15 accident victim for reimbursement of its legal fees if the family did not dismiss its lawsuit. In
16 another, GM sent the victim’s family a terse letter, saying there was no basis for any claims against
17 GM. These statements were part of GM’s campaign of deception.

18 63. In July 2011, GM legal staff and engineers met regarding an investigation of crashes
19 in which the air bags did not deploy. The next month, in August 2011, GM initiated a Field
20 Performance Evaluation (“FPE”) to analyze multiple frontal impact crashes involving MY 2005-
21 2007 Chevrolet Cobalt vehicles and 2007 Pontiac G5 vehicles, as well as a review of information
22 related to the Ion, HHR, and Solstice vehicles, and airbag non-deployment.²⁰

23 64. GM continued to conceal and deny what it privately knew – that the ignition
24 switches were defective. For example, in May 2012, GM engineers tested the torque of the
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26 ¹⁸ GM Mar. 11, 2014 Ltr. to NHTSA, attached chronology at 2.

27 ¹⁹ “‘Cardinal sin’: Former GM engineers say quiet ‘06 redesign of faulty ignition switch was a
28 major violation of protocol.” *Automotive News* (Mar. 26, 2014).

²⁰ GM Mar. 11, 2014 Ltr. to NHTSA, attached chronology at 2.

1 ignition switches in numerous Old GM vehicles.²¹ The results from the GM testing showed that
2 the majority of the vehicles tested from the 2003 to 2007 model/years had torque performance at or
3 below 10 Newton centimeters ("Ncm"), which was below the original design specifications
4 required by GM.²² Around the same time, high ranking GM personnel continued to internally
5 review the history of the ignition switch issue.²³

6 65. In September 2012, GM had a GM Red X Team Engineer (a special engineer
7 assigned to find the root cause of an engineering design defect) examine the changes between the
8 2007 and 2008 Chevrolet Cobalt models following reported crashes where the airbags failed to
9 deploy and the ignition switch was found in the "off" or "accessory" position.²⁴

10 66. The next month, in October of 2012, Design Research Engineer Ray DeGiorgio (the
11 lead engineer on the defective ignition switch) sent an email to Brian Stouffer of GM regarding the
12 "2005-7 Cobalt and Ignition Switch Effort," stating: "If we replaced switches on ALL the model
13 years, i.e., 2005, 2006, 2007 the piece price would be about \$10.00 per switch."²⁵

14 67. The October 2012 email makes clear that GM considered implementing a recall to
15 fix the defective ignition switches in the Chevy Cobalt vehicles, but declined to do so in order to
16 save money.

17 68. In April 2013, GM again *internally* acknowledged that it understood that there was
18 a difference in the torque performance between the ignition switch parts in later model Chevrolet
19 Cobalt vehicles compared with the 2003-2007 model/year vehicles.²⁶

20 69. Notwithstanding what GM actually knew and privately acknowledged,²⁷ its public
21 statements and position in litigation was radically different. For example, in May 2013, Brian
22 Stouffer testified in deposition in a personal injury action (*Melton v. General Motors*) that the Ncm

23 ²¹ GMHEC000221427; *see also* Mar. 11, 2014 Ltr. to NHTSA, attached chronology.

24 ²² *Id.*

25 ²³ GMHEC000221438.

26 ²⁴ Email from GM Field Performance Assessment Engineer to GM Red X Team Engineer
(Sept. 6, 2012, 1:29:14 p.m., GMHEC000136204).

27 ²⁵ GMHEC000221539.

28 ²⁶ GM Mar. 11, 2014 Ltr. to NHTSA, attached chronology at 4.

²⁷ *See* GMHEC000221427.

1 performance (a measurement of the strength of the ignition switch) was *not* substantially different
2 as between the early (e.g., 2005) and later model year (e.g., 2008) Chevrolet Cobalt vehicles.²⁸

3 70. Similarly, a month before Mr. Stouffer's testimony, in April 2013, GM engineer
4 Ray DeGiorgio denied the existence of any type of ignition switch defect:

5 Q: Did you look at, as a potential failure mode for this switch, the
6 ease of which the key could be moved from run to accessory?

7 ...

8 THE WITNESS: No, because in our minds, moving the key from, I
9 want to say, *run to accessory is not a failure mode, it is an expected*
10 *condition*. It is important for the customer to be able to rotate the
11 key fore and aft, so as long as we meet those requirements, *it's not*
12 *deemed as a risk*.

13 Q: Well, it's not expected to move from run to accessory when
14 you're driving down the road at 55 miles an hour, is it?

15 ...

16 THE WITNESS: *It is expected for the key to be easily and*
17 *smoothly transitioned from one state to the other* without binding
18 and without harsh actuations.

19 Q: And why do you have a minimum torque requirement from run to
20 accessory?

21 ...

22 THE WITNESS: It's a design feature that is required. You don't
23 want anything flopping around. You want to be able to control the
24 dimensions and basically provide – one of the requirements in this
25 document talks about having a smooth transition from detent to
26 detent. One of the criticisms – I shouldn't say criticisms. One of the
27 customer complaints we have had in the – and previous to this was
28 he had cheap feeling switches, they were cheap feeling, they were
higher effort, and the intent of this design was to provide a smooth
actuation, provide a high feeling of a robust design. That was the
intent.

Q: I assume the intent was also to make sure that when people were
using the vehicle under ordinary driving conditions, that if the key
was in the run position, it wouldn't just move to the accessory
position, correct?

...

²⁸ GMHEC000146933. That said, "[t]he modified switches used in 2007-2011 vehicles were also approved by GM despite not meeting company specifications." Mar. 31, 2014 Ltr. to Mary Barra from H. Waxman, D. DeGette, and J. Schankowsky.

1 A: That is correct, but also – it was not intended – *the intent was to*
2 *make the transition to go from run to off with relative ease.*²⁹

3 71. Brian Stouffer, in an email to Delphi regarding the ignition switch in the Chevy
4 Cobalt, acknowledged that the ignition switch in early Cobalt vehicles – although bearing the same
5 part number – was different than the ignition switch in later Cobalt vehicles.³⁰ Mr. Stouffer
6 claimed that “[t]he discovery of the plunger and spring change was made aware to GM during a
7 [sic] course of a lawsuit (*Melton v. GM*).”³¹ Delphi personnel responded that GM had authorized
8 the change back in 2006 but the part number had remained the same.³²

9 72. Eventually, the defect could no longer be ignored or swept under the rug.

10 73. After analysis by GM’s Field Performance Review Committee and the Executive
11 Field Action Decision Committee (“EFADC”), the EFADC finally ordered a recall of *some* of the
12 vehicles with defective ignition switches on January 31, 2014.

13 74. Initially, the EFADC ordered a recall of only the Chevrolet Cobalt and Pontiac G5
14 for model years 2005-2007.

15 75. After additional analysis, the EFADC expanded the recall on February 24, 2014, to
16 include the Chevrolet HHR and Pontiac Solstice for model years 2006 and 2007, the Saturn Ion for
17 model years 2003-2007, and the Saturn Sky for model year 2007.

18 76. Most recently, on March 28, 2014, GM expanded the recall a third time, to include
19 Chevrolet Cobalts, Pontiac G5s and Solstices, Saturn Ions and Skys from the 2008 through 2010
20 model years, and Chevrolet HHRs from the 2008 through 2011 model years.

21 77. All told, GM has recalled some 2.19 million vehicles in connection with the ignition
22 switch defect.

23 78. In a video message addressed to GM employees on March 17, 2014, CEO Mary
24 Barra admitted that the Company had made mistakes and needed to change its processes.

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26 ²⁹ GMHEC000138906 (emphasis added).

27 ³⁰ GMHEC000003197.

28 ³¹ *Id.* See also GMHEC000003156-3180.

³² See GMHEC000003192-93.

1 79. According to Ms. Barra, “[s]omething went terribly wrong in our processes in this
2 instance, and terrible things happened.” Barra went on to promise, “[w]e will be better because of
3 this tragic situation if we seize this opportunity.”³³

4 80. Based on its egregious conduct in concealing the ignition switch defect, GM
5 recently agreed to pay the maximum possible civil penalty in a Consent Order with the National
6 Highway Traffic Safety Administration (“NHTSA”) and admitted that it had violated its legal
7 obligations to promptly disclose the existence of known safety defects.

8 **2. The power steering defect.**

9 81. Between 2003 and 2010, over 1.3 million GM-branded vehicles in the United States
10 were sold with a safety defect that causes the vehicle’s electric power steering (“EPS”) to suddenly
11 fail during ordinary driving conditions and revert back to manual steering, requiring greater effort
12 by the driver to steer the vehicle and increasing the risk of collisions and injuries.

13 82. As with the ignition switch defects, GM was aware of the power steering defect
14 long before it took anything approaching full remedial action.

15 83. When the power steering fails, a message appears on the vehicle’s dashboard, and a
16 chime sounds to inform the driver. Although steering control can be maintained through manual
17 steering, greater driver effort is required, and the risk of an accident is increased.

18 84. In 2010, GM first recalled Chevy Cobalt and Pontiac G5 models for these power
19 steering issues, yet it did *not* recall the many other vehicles that had the very same power steering
20 defect.

21 85. Documents released by NHTSA show that GM waited years to recall nearly
22 335,000 Saturn Ions for power steering failure – despite receiving nearly 4,800 consumer
23 complaints and more than 30,000 claims for warranty repairs. That translates to a complaint rate of
24 14.3 incidents per thousand vehicles and a warranty claim rate of 9.1 percent. By way of
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27

28 ³³ “*Something Went ‘Very Wrong’ at G.M., Chief Says.*” N.Y. TIMES (Mar. 18, 2014).

1 comparison, NHTSA has described as “high” a complaint rate of 250 complaints per 100,000
2 vehicles.³⁴ Here, the rate translates to 1430 complaints per 100,000 vehicles.

3 86. In response to the consumer complaints, in September 2011 NHTSA opened an
4 investigation into the power steering defect in Saturn Ions.

5 87. NHTSA database records show complaints from Ion owners as early as June 2004,
6 with the first injury reported in May 2007.

7 88. NHTSA linked approximately 12 crashes and two injuries to the power steering
8 defect in the Ions.

9 89. In 2011, GM missed yet another opportunity to recall the additional vehicles with
10 faulty power steering when CEO Mary Barra – then head of product development – was advised by
11 engineer Terry Woychowski that there was a serious power steering issue in Saturn Ions.
12 Ms. Barra was also informed of the ongoing NHTSA investigation. At the time, NHTSA
13 reportedly came close to concluding that Saturn Ions should have been included in GM’s 2005
14 steering recall of Cobalt and G5 vehicles.

15 90. Yet GM took no action for four years. It wasn’t until March 31, 2014, that GM
16 finally recalled the approximately 1.3 million vehicles in the United States affected by the power
17 steering defect.

18 91. After announcing the March 31, 2014 recall, Jeff Boyer, GM’s Vice President of
19 Global Vehicle Safety, acknowledged that GM recalled some of these same vehicle models
20 previously for the *same issue*, but that GM “did not do enough.”

21 **3. Airbag defect.**³⁵

22 92. From 2007 until at least 2013, nearly 1.2 million GM-branded vehicles in the United
23 States were sold with defective wiring harnesses. Increased resistance in the wiring harnesses of
24 driver and passenger seat-mounted, side-impact air bag (“SIAB”) in the affected vehicles may
25 cause the SIABs, front center airbags, and seat belt pretensioners to not deploy in a crash. The

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27 ³⁴ See [http://www-odi.nhtsa.dot.gov/cars/problems/defect/-](http://www-odi.nhtsa.dot.gov/cars/problems/defect/-results.cfm?action_number=EA06002&SearchType=QuickSearch&summary=true)
[results.cfm?action_number=EA06002&SearchType=QuickSearch&summary=true](http://www-odi.nhtsa.dot.gov/cars/problems/defect/-results.cfm?action_number=EA06002&SearchType=QuickSearch&summary=true).

28 ³⁵ This defect is distinct from the airbag component of the ignition switch defect discussed
above and from other airbag defects affecting a smaller number of vehicles, discussed below.